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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WOLFGANG BEILFUSS, RALF GRADTKE,
INGO KRULL, and KLAUS WEBER

Appeal 2009-009665
Application 10/663,257
Technology Center 1600

Decided: November 17, 2009

Before DONALD E. ADAMS, DEMETRA J. MILLS, and
LORA M. GREEN, *Administrative Patent Judges.*

GREEN, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 18-25, 30-48, 57, and 58. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Claim 18 is representative of the claims on appeal, and reads as follows:

18. A preservative with reduced formaldehyde emissions which comprises:
a) a least one formal; and
b) at least one-emission-reducing additive, wherein,
said at least one emission-reducing additive comprises urea.

Appellants have elected N,N′-methylenebis(5-methyloxazolidine) as the formal (Ans. 10).

The Examiner relies on the following evidence:

Beilfuss	US 2001/0021711 A1	Sep. 13, 2001
Smith	US 7,078,005 B2	Jul. 18, 2006

We affirm.

ISSUES

The Examiner concludes that claims 18-21, 23, 30-48, 57, and 58 are rendered obvious by the combination of Smith and Beilfuss.

Appellants contend that the Examiner provides no reason to combine Beilfuss with Smith, and further, even if the references were combined, they do not provide a composition comprising urea as required by claim 18.

Thus, the issues on appeal are: 1) Have Appellants demonstrated that the Examiner erred in combining Beilfuss with Smith: and 2) Have Appellants demonstrated the Examiner erred in concluding that the combination provides a composition comprising urea as required by claim 18?

FINDINGS OF FACT

FF1 The Examiner rejects claims 18-21, 23, 30-48, 57, and 58 under 35 U.S.C. § 103(a) as being obvious over the combination of Smith and Beilfuss (Ans. 5). As Appellants do not argue the claims separately, we focus our analysis on claim 18, and claims 19-21, 23, 30-48, 57, and 58 stand or fall with that claim. 37 C.F.R. § 41.37(c)(1)(vii).

FF2 The Examiner finds that Smith teaches a composition comprising urea and an amine, such as N,N′-methylenebisoxazolidine (Ans. 5).

FF3 Specifically, the Examiner finds:

> Smith teaches an H_2S scavenger product comprising a) a reaction product derivable by a reaction of a carbonyl group containing compound with an alcohol, thiol, amide, thioamide, urea or thiourea, preferably the reaction of formaldehyde with an amine-free alcohol or urea, and b) an amine such as N,N'-methylenebisoxazolidine for use in reducing or eliminating hydrogen sulphide in natural gas or crude or refined oil streams (abstract; col. 4, line 37; col. 5, lines 26-36; col. 6, lines 23-24 and 50-57). For virtually all chemical reactions, it is impossible for a reaction to proceed to 100% completion, thus unreacted reactants are still present once the chemical reaction has reached equilibrium. Thus, one of ordinary skill in the art would expect that the reaction product of a) described by Smith would be accompanied by unreacted, for example, formaldehyde and urea. Thus, Smith teaches the generic combination of urea and an amine such as N,N'-methylenebisoxazolidine. Smith additionally teaches that said amine has a higher basicity and buffering capacity (col. 6, lines 27-28). It is noted that the "comprising" (i.e., open-ended) language in the instant claims allows for other components to be present and does not exclude a reactionary product utilizing urea.

(*Id.* at 10.)

FF4 Smith "provides a process for reducing the level of hydrogen sulphide in a liquid or gas, by treatment of the liquid or gas with an H_2S-scavenger product comprising the reaction product of a carbonyl group-containing compound with an alcohol, thiol, amide, thioamide, urea or thiourea." (Smith, col. 1, ll. 46-51.)

FF5 Smith teaches further that the reactants may be used in stochiometric ratio, but that "other ratios may be used, and . . . it is not necessary to proceed to full reaction of all hydroxy, thiol, amide, thioamide, urea, or thiourea groups." (*Id.* at col. 3, ll. 31-34.)

FF6 Smith notes that "[w]hen a stochiometric excess of the alcohol, thiol, amide, thioamide, urea or thiourea is used the presence of residual free carbonyl compound in the final product may be reduced to extremely low levels." (*Id.* at col. 3, ll. 42-45.)

FF7 Smith teaches further that the addition of an amine, such as a bisoxazolidine, provides additional advantages, as the amine has a higher basicity and buffering capacity than the reaction product (*id.* at col. 5, l. 65-col. 6, l. 27).

FF8 Smith discloses the use of N,N′-methylenebisoxazolidine as a bisoxazolidine that may be used as the amine in the composition (*id.*).

FF9 The Examiner notes that "Smith is silent to the particular N,N′-methylene-bisoxazolidine ,N,N'-methylenebis(5-methyloxazolidine)." (Ans. 6.)

FF10 The Examiner relies on Beilfuss for teaching "bactericidal and fungicidal liquid preparations for industrial products such as a fuel additive comprising at least one bactericidal N-formal." (*Id.*)

FF11 The Examiner finds that Beilfuss teaches that the N-formals "possess alkalinizing and buffering properties, as well as bactericidal properties," and that a preferred N-formal is 3,3′-(methylenebis(5-methyloxazolidine)) (*id.* at 6-7).

FF12 The Examiner concludes that it would have been obvious to the ordinary artisan to use 3,3′-methylenebis(5-methyloxazolidine) as taught by Beilfuss as the amine in the composition of Smith because the amines share similar buffering and alkalinizing properties, and are utilized in the same industrial products such as a fuel additive (Ans. 7).

FF13 The Examiner further concludes that the combination is obvious as Smith teaches the combination of a urea and an amine such as a bisoxazolidine, such as a N,N′-methylenebisoxazolidine, and Beilfuss teaches the particular N,N′-methylenebisoxazolidine, 3,3′-methylenebis(5-methyloxazolidine), which has the properties required by the bisoxazolidine of Smith (*id.* at 11).

PRINCIPLES OF LAW

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) secondary considerations of nonobviousness, if any. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The Supreme Court has recently emphasized that "the [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and

creative steps that a person of ordinary skill in the art would employ." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* at 416. Moreover, an "[e]xpress suggestion to substitute one equivalent for another need not be present to render such substitution obvious." *In re Fout*, 675 F.2d 297, 301 (CCPA 1982).

ANALYSIS

Appellants argue that the Examiner provides no reason to combine Beilfuss with Smith, as Smith "fails to suggest that the H_2S scavenger product would have required any additional bactericidal agents to improve storage or shelf-life." (App. Br. 5.) Beilfuss, Appellants assert, "discloses preserving industrial products from bacterial and fungal attack during storage," but "neither discloses nor suggests that a H_2S scavenger product for hydrocarbon streams including sewage gases or natural gas/oil would also require preservation from bacterial and fungal attack during storage." (*Id.* at 6.)

Appellants argue further that even if one were to combine Beilfuss with Smith, one would not arrive at the subject matter of claim 18 as the H_2S scavenger product of Smith is a reaction product of a carbonyl group-containing compound with a urea or thiourea, thus the object of Smith is to use the reaction product, not the reactant (*id.*). Appellants assert further that "[o]nce urea reacts to form the reaction product, there is no 'urea' *per se* to

'utilize.'" (*Id.* at 7.) Thus, Appellants argue, Smith "does not require at least urea" as required by claim 18 (*id.* at 8).

We have carefully considered Appellants' arguments, but conclude that Appellants have not demonstrated that the Examiner erred in combining Beilfuss with Smith to arrive at the subject matter of claim 18.

Claim 18 is drawn to a composition comprising a urea, and a N,N′-methylenebis(5-methyloxazolidine) formal. The claim encompasses any amount of each of the components, as no amount is specified in the claim, and the composition can contain other, unspecified, components because of the use of the open transition term "comprising." Moreover, the statement in the preamble that the composition is "[a] preservative with reduced formaldehyde emissions" is a statement of intended, and not a patentable limitation.

We thus agree with the Examiner that the combination of Smith and Beilfuss renders the composition of claim 18 obvious as Smith teaches the combination of a urea and an amine, such as a bisoxazolidine, and more specifically a N,N′-methylenebisoxazolidine, and Beilfuss teaches the particular N,N′-methylenebisoxazolidine, 3,3′-methylenebis(5-methyloxazolidine), which has the properties required by the bisoxazolidine of Smith.

As to Appellants' argument that Smith is drawn to the use of a reaction product of urea and not urea per se, we agree with the Examiner that no reaction goes to completion, thus at least a small amount of the urea reactant would remain present in the composition, and as set forth above, claim 18 does not require any specific amount of urea. In addition, Smith

specifically teaches that a stochiometric excess of urea may be used, thus, even if the reaction went almost to completion, there would still be unreacted urea remaining in the composition.

As to Appellants' arguments that the Examiner withdrew claim 24 from consideration per a restriction requirement, as those claims include emission-reducing additive in addition to urea, as noted by the Examiner (Ans. 3), the appropriateness of a restriction requirement is petitionable subject matter, and not subject to review on appeal. All that is before us on appeal is whether the combination of Smith and Beilfuss teaches a composition of claim 18, and as set forth above, we conclude that it does.

CONCLUSIONS OF LAW

We conclude: 1) Appellants have not demonstrated that the Examiner erred in combining Beilfuss with Smith: and 2) Appellants have not demonstrated the Examiner erred in concluding that the combination provides a composition comprising urea as required by claim 18.

We thus affirm the rejection of claims 18-21, 23, 30-48, 57, and 58 under 35 U.S.C. § 103(a) as being obvious over the combination of Smith and Beilfuss.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(2006).

AFFIRMED

cdc

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